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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,731	03/01/2000	Mitsuru Nishitsuka	041514-5171	2693

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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/516,731

Applicant(s)

NISHITSUKA ET AL.

Examiner

Armando Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 11-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-6 and 11-17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,5,6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofstetter et al (PN 6,136,623) in view of Kadam (PN 5,699,218) and Hatakoshi et al (PN 6,400,742).

Regarding claims 1,5,6 and 17,

Hofstetter et al illustrates in figure 6 a ridge type multiple wavelength laser array (100) and (200) by flip-chip bonding, where the lasers face each other and laser system (200) comprises gallium nitride (GaN), as described in column 6 lines 18-66. In column 10 describes the operation of the lasers as alternating between wavelengths.

Hofstetter et al is silent as to the laser system having an anti-parallel interconnection, as implied by claim 1.

Kadam illustrates in figure 5 a solid-state relay system having in particular a bi-directional light emitting device (LED) (32) with a pair of LEDs oppositely electrically connected or having an anti-parallel interconnection with each other, where one of the

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LED illuminates with forward current and the other LED illuminates with reverse current.

LEDs are commonly known in the art to be composed of semiconductor material.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to interconnect the laser system of Hofstetter et al in an anti-parallel interconnection as disclosed by Kadah because it would allow the laser system to alternate between wavelengths.

Regarding claim 5,

Hofstetter et al does not disclose the laser system as having a Schottky barrier.

However, the use of Schottky barriers between the laser and the electrode is well-known in the art as illustrates in figure 17 of Hatakoshi et al, which shows a ridge type semiconductor laser composed of gallium nitride (GaN) in column 20 lines 57-61 disclosed the use of a Schottky barrier between the electrode and the laser.

Allowable Subject Matter

Claims 2-4 and 11-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2,

None of the cited prior arts alone or combination disclose the interconnection of the semiconductor lasers, where the claimed lasers are provided with a first connecting layer between the p-electrode of the first laser and the n-electrode of the second laser

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and a second connecting layer between the p-electrode of the second laser and the n-electrode of the first laser.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.



Armando Rodriguez
Examiner
Art Unit 2828



Paul Ip
Supervisor
Art Unit 2828

AR/PI